

**REMARKS**

With entry of the foregoing amendment, Claims 2 through 9 and 11-16 remain in the application. Claim 1 and Claim 10 have been withdrawn.

Claim 11 has now been re-written in independent form including all of the limitations of base Claims 1 and 10 from which it previously depended. It is believed that Claim 11 is now in condition for allowance for the reasons given below.

Each of the other claims remaining in the application now depend directly or indirectly from Claim 11 and, therefore, are allowable also for the same reasons as Claim 11.

The Examiner had previously rejected Claim 11 under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,510,322 ("Schulte-Kellinghaus") and U.S. patent 6,539,237 ("Sayers, et al."). The Examiner was of the opinion that the Schulte-Kellinghaus patent disclosed all the limitations of Claim 11 with the exception of reading a reservation record from an HLR, authenticating the user, and then moving the reservation record to a VLR. He admitted that the Sayers, et al. patent does not teach these remaining three steps. However, the Examiner concluded that since Sayers et al. teaches sending static user data and user subscription data to the VLR, that the present claimed invention would have been obvious.

We must respectfully disagree with this conclusion. Prior to discussing the prior art references in detail, we ask the Examiner to first consider the details of the present invention as perhaps best described in connection with Figure 2 and the detailed description beginning at page 9 of the Applicants' specification. In a first step 100, a reservation agent 50 receives a request to reserve communication resource such as a wireless communication channel. In a next step 110, a reservation record 60 is stored in a Home Location Register (HLR) 44. Such a reservation record 60 is typically associated with an International Mobile Subscriber Identifier (IMSI) record in the HLR 44 associated with the particular subscriber that is requesting that the reservation be made.

On occurrence of an appropriate event, such as a location update event and/or when the user of a corresponding mobile station 20 attempts to initiate a call, a Mobile Switching Center (MSC) 42 reads the reservation records from the HLR 44. The MSC 42 then performs a validation on a particular user such as to determine whether they are an authorized user of the system, their present location, billing rates, and other information needed to validate that the

particular user is permitted to make a call. The reservation record 62 then has a bit set within it to indicate that it has been validated. The validated record which contains the reservation record is now stored in a Visitor Location Register (VLR) 46 associated with the cell site 24 in which the mobile station is located.

In a next step 130, the MSC and Base Station Subsystem (BSS) 30 then ensures the appropriate channel resources are held for exclusive use of the subscriber identified in the validated reservation record 62. Thus, the MSC 42 may have a running processor thread which periodically scans reservation records 62 located in the VLR 46. Upon discovery that a reservation record matches a time and date which is upcoming in the near future, the MSC 42 then instructs its associated BSS 30 and, in particular, the Base Transceiver Station (BTS) 32 associated with the location of the subscriber 20, to maintain the indicated number of channels necessary to support the desired call or other service type as indicated in the validated reservation record 62.

So when a user actually initiates a call, step 140 is entered in which the MSC 42 instructs the BSC 34 (in particular the BTS 32) to assign the already reserved channel to the mobile station 20.

Thus, one particular advantage presented by the invention is that by including the reservation request among the data associated with the subscriber's IMSI record, the validated reservation records 62 are caused to be stored in visitor location register (VLR) 46 automatically, in accordance with normal mobile data handling procedures. As a result, modifications need not be made to the programming logic of the MSC/BSC other than to make an accommodation for the additional data record in the HLR 44 and VLR 46.

This particular sequence of events also eliminates the need to send special messages between the MSC and BSC that would otherwise be required to set up the reservation. It also ensures that reservation request messages are always associated with the VLR 46 and, in turn, the cell site, in which the mobile station will be located.

Now turning attention to the prior art, we admit that the Schulte-Kellinghaus patent indeed describes a system in which a reservation request may be made to indicate to a switching center (10) that a specific subscriber wants to reserve communication channel capacity in a cellular network. As mentioned by the Examiner, in Figure 7 of this patent and in the text

beginning at column 8, line 40, it is clear that the subscriber may submit a request to reserve a communication bandwidth at a particular time,  $T_{\text{request}}$ . A switching center 10 then either rejects or confirms the request - and the requested communication capacity will be reserved for the pre-specified time beginning at a start time  $t_s$  and ending at an end time  $t_e$  for a time interval,  $T_{\text{service}}$ .

There is also a mention that one particular option might be to give preference to subscribers of a specified user group i.e., subscribers that are responsible for security or medical care. This information as might be derived from a data exchange between the switching center 10 and a Home Location Register (HLR). In addition, the contents of a Visitor Location Register (VLR) can be checked to determine if the requesting subscriber is only a visitor in the present mobile cellular network, and therefore is to be given fewer rights than home based subscribers.

All that is suggested by the prior art, therefore, is that (a) the switching center 10 must initiate a request for reservation at the particular base station which is to service the call or (b) that a VLR or HLR record can be consulted to determine if a user is a "priority" user. However, there appears to be no further explanation suggestions, or teaching in the Schulte-Kellinghaus patent of actual messages, and/or other events which must occur between the switching center 10 and the various other elements of the wireless system in order to actually set up the reservation in the first place.

The patent issued to Sayers et al., at column 5, lines 1-12 does describe the general purpose of an HLR and VLR in a Global System for Mobile (GSM) type wireless system. It is said therein that:

the home location register (HLR) contains all the information related to the operator subscriber database...

i.e., that the HLR stores both "static" and "dynamic" data related to the subscriber. Static data includes items such as international mobile subscriber identity, subscriber (MSISDN) number and registered supplementary services. Dynamic data includes for example, current location of the mobile user (in terms of VLR and MSCV.164 number), and call forwarding numbers. It is also stated in Sayers et al. that the HLR downloads the required data to a VLR database when a mobile user registers in a VLR area.

However, there is not any suggestion or teaching at all in Sayers for how to handle data associated with reservations, in particular, how to reserve necessary bandwidth which is the exact problem sought to be solved by the present invention.

Therefore we can see no teaching in the cited references that data associated with a particular reservation, i.e., a mobile services a reservation request, be stored in a Home Location Register (HLR)

Nor is there any teaching, even in the combination of references, that the reservation request then be transferred from the HLR to VLR, as claimed.

These references do not teach the claimed steps of, prior to a reservation time, reading the reservation from a Home Location Register, validating the record for access if the user is authorized, and moving a validated reservation record to a Visitor Location Register.

With the Applicants' approach, data necessary to define reservations automatically travels with the subscriber unit's data, when that data is moved from its HLR to a VLR database, such as when a subscriber unit is activated within a particular cell site. The invention thus eliminates additional messaging necessary between the BSC, BSS or BTS which would be required with a system as described in the cited prior art.

At best, the Examiner has merely used the Applicants' claim as a roadmap to find the various elements in disparate places in the prior art. The references themselves do not teach any motivation to combine these features. One of skill in the art would thus not have been motivated to store a bandwidth reservation within a Home Location Register absent in the Applicants' teachings.

There would be many possible ways of transferring information concerning a reservation request from a central switching center to the base transceiver stations and mobile units which must carry it out. The Applicant is only trying to claim one of them. It is not proper for the Examiner to suggest that one of skill in the art would try each of numerous possible choices until the one possibility arrived at by the claimed invention is reached, where the prior art gives no direction as to which of the many possible choices is likely to be preferred. See *in re O'Farrell*, 853F.2d894,903 (Fed. Cir. 1988). There must be some suggestion or motivation either in the references themselves or in knowledge generally available to one of ordinary skill in the art to try the specific thing claimed.

In this instance there is no suggestion in the prior art of desirability of combining teachings of the two references. The Schulte-Kellinghaus patent teaches nothing at all about how VLR and HLR databases are updated when a mobile unit enters a particular roaming and/or cellular area. The Sayers et al. patent teaches nothing about how to make reservations for various wireless bandwidth or and/or other services.

### CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By 

David J. Thibodeau, Jr.

Registration No.: 31,671

Telephone: (978) 341-0036

Facsimile: (978) 341-0136

Concord, MA 01742-9133

Dated: 9/2/03